

systems to non-geostationary orbits would be in the public interest, these comments provide significant additional support for this proper finding. Consequently, the Commission has the legal authority both to adopt a threshold eligibility criterion for the MSS Above 1 GHz service that specifies that only non-geostationary systems will be found technically qualified to be licensees, and to apply that criterion to deny any pending applications that do not conform to the requirement.

**b.     The Exclusion of Geostationary Systems From The  
MSS/RDSS Bands Would Not Result In The Loss Of  
Actual Or Potential Service To The Public.**

As an initial matter, TRW observes that the exclusion of geostationary systems from the MSS/RDSS bands would not result in a net loss of communications service to the public. As the Commission recites in its NPRM, it has already authorized a consortium of satellite companies -- AMSC -- to provide voice mobile satellite service on a sole-source basis in the United States in the upper L-band frequencies (1545-1559/1646.5-1660.5 MHz) by means of a geostationary system.<sup>22/</sup> Thus, the public will be able to obtain the services that geostationary

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<sup>22/</sup> See NPRM, 9 FCC Rcd at 1105 (¶ 20) & n.47 (citing Amendment of Parts 2, 22 and 25 of the Commission's Rules to Allocate Spectrum For and to Establish Other Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service for the Provision of Various Common Carrier Services, 4 FCC Rcd 6041 (1989) ("AMSC Authorization Order")). In addition to its three-satellite monopoly system in the upper L-band frequency, AMSC has applied to make use of the  
(continued...)

MSS can make available whether or not geostationary MSS systems are admitted to the MSS/RDSS bands.

Moreover, the expansion of AMSC's system into the MSS/RDSS bands will not support any additional users beyond those that would be served under AMSC's prior authorization.<sup>23/</sup> AMSC has provided no evidence to suggest that the additional spectrum it seeks would allow it to provide additional voice channels,<sup>24/</sup> and its 1991 application amendment did not propose adjustments to the prime power systems of its spacecraft that could have made such additional capacity possible.

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<sup>22/</sup>(...continued)

MSS/RDSS bands in this proceeding to add bandwidth to two of its three spacecraft. AMSC is also seeking an authorization to modify its spacecraft to assimilate an additional 30 megahertz of spectrum (at 1530-1544/1631.5-1645.5 MHz).

<sup>23/</sup> See Petition to Deny or Dismiss of TRW Inc., File Nos. 15-DSS-MP-91/16-DSS-MP-91 (Dec. 18, 1991) at 14 ("Petition to Deny AMSC Application").

<sup>24/</sup> Indeed, AMSC's proposed downlink band to be paired with an uplink at 1616.5-1626.5 MHz is unavailable. See Amendment of Section 2.106 of the Commission's Rules to Allocate the 1610-1626.5 MHz and the 2483.5-2500 MHz Bands for Use by the Mobile-Satellite Service, Including Non-Geostationary Satellites, (Notice of Proposed Rule Making and Tentative Decision), 7 FCC Rcd 6414 (1992) ("Allocation NPRM"). No alternative has been proposed.

**c. Non-Geostationary MSS Systems Offer Technical Benefits That Geostationary Systems Cannot.**

As the Commission observed in its NPRM, the Communications Act requires it "to encourage the provision of new technologies and services to the public."<sup>25/</sup> TRW agrees with the Commission that non-geostationary MSS systems represent precisely the type of new technologies and services that the Commission is bound by law to foster.<sup>26/</sup>

The pending applications for non-geostationary MSS systems are the world's first commercial, voice-capable non-geostationary mobile satellite proposals.<sup>27/</sup> The lower altitudes at which non-geostationary MSS systems will orbit the Earth provide them with a principal advantage over geostationary systems.<sup>28/</sup> Odyssey, TRW's proposed system, will operate using three satellite planes in orbits 5,600 nautical miles above the Earth.<sup>29/</sup> By operating closer to the

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<sup>25/</sup> NPRM, 9 FCC Rcd at 1105 (¶ 20) (quoting 47 U.S.C. § 7(a)).

<sup>26/</sup> See NPRM, 9 FCC Rcd at 1105 (¶ 20).

<sup>27/</sup> See id. The importance of the proposed systems was recognized at WARC-92, where bands were allocated for non-geostationary systems for the first time and procedures and studies were initiated to allow their rapid introduction. See International Telecommunication Union, Final Acts of the 1992 World Administrative Radio Conference (WARC-92), Malaga-Torremolinos (1992) at 54, 67, 169-72, 189-91, 213-14 ("WARC-92 Final Acts").

<sup>28/</sup> See NPRM, 9 FCC Rcd at 1105 (¶ 20).

<sup>29/</sup> Odyssey is a trademark of TRW Inc. Odyssey is a satellite telecommunications  
(continued...)

Earth's surface, Odyssey and other non-geostationary MSS systems will shorten the transmission time between two Earth stations and thereby reduce or eliminate the perceptible time delay inherent in geostationary satellite-delivered telephone service.<sup>30/</sup> As any experienced commercial traveler can attest, such delays not only make business relations via telephone awkward, but can result in embarrassing and sometimes serious misunderstandings during sensitive transactions or negotiations. By permitting normal conversation among users, MSS Above 1 GHz service systems will facilitate more rapid and efficient business relations among companies and individuals within the United States and abroad.

Odyssey and other non-geostationary systems' lower altitude orbits will also allow communications at lower power between terrestrial equipment and satellites. This attribute of non-geostationary systems holds tremendous significance for the user public, in that it permits satellite communications via hand-held, mobile user transceivers. Geostationary systems, which must operate from an altitude of

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<sup>29/</sup>(...continued)

system which is to be comprised of a constellation of twelve satellites in medium-Earth orbit. See Application of TRW Inc. to the Federal Communications Commission for Authority to Construct a New Communications Satellite System, Odyssey, File Nos. 20-DSS-P-91(12) and CSS-91-015, at 27-28 (filed May 31, 1991) ("Odyssey Application").

<sup>30/</sup> Whereas AMSC's proposed system would produce a propagation time delay of 270 milliseconds, signals travelling via Odyssey will be delayed by only 69 to 84 milliseconds. The other MSS Above 1 GHz applicants -- Constellation, Ellipsat, LQSS and Motorola -- have proposed systems with propagation delays of between 10 and 72 milliseconds.

22,300 miles, cannot offer reliable or affordable hand-held terminal service with currently available satellite technology. In order to compensate for the loss of signal strength between hand-held units and satellites, geostationary systems would either have to employ prohibitively large satellite antennas -- up to 20 meters in diameter -- or large and cumbersome handset technology that would have to be pointed towards a satellite in order to transmit a usable signal. As a result, even next generation geostationary systems will only offer handheld terminals that are dependent for many of their key functions on "vehicular boosters" or on equipment that cannot be moved during operation.<sup>31/</sup>

In addition, non-geostationary satellites are able to provide superior coverage of far northern and southern latitudes as compared with geostationary systems. Satellites in non-geostationary orbits move across the surface of the Earth, as contrasted with geostationary satellites that remain fixed with respect to a point on the Earth's surface. With multiple spacecraft in several orbital planes, non-geostationary systems can provide service to the entire globe, including higher latitudes, without sacrificing adequate service to equatorial regions.

The ramifications of this difference are substantial. For example, whereas AMSC covers less than half the state of Alaska with an elevation angle of 5°

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<sup>31/</sup> See Personal Communications Satellite Corporation, Application for Authority to Construct a Domestic Communications Satellite System for the Provision of Mobile Satellite Service, File Nos. 24-DSS-P-94 and 25-DSS-P-94, at 20-21 (filed April 7, 1994).

or better,<sup>32/</sup> Odyssey covers the entire state 100 percent of the time with an elevation angle of 10° or better. Other non-geostationary systems propose similar levels of coverage and indeed may be required to provide such coverage.<sup>33/</sup> The revolutionary advancement in telecommunications that Odyssey and others will foster through global coverage should not be hampered or delayed by systems that can provide no new benefits to the public.

**d. Odyssey And Other Non-Geostationary MSS Above 1 GHz Systems Will Provide Enormous Social And Economic Benefits For The United States And The World.**

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In this section, TRW responds to the Commission's express request for a demonstration of each applicant's ability "to generate social, economic, and technical benefits, both domestically and globally," and an identification of "the services they intend to provide, including . . . their intended customer base and the manner in which they plan to offer the service."<sup>34/</sup>

TRW notes generally that the inherently global nature of Odyssey and other proposed non-geostationary MSS Above 1 GHz systems will allow them to reach

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<sup>32/</sup> See AMSC Prospectus at 2 (dated Nov. 22, 1993).

<sup>33/</sup> See Section I(A)(3), infra.

<sup>34/</sup> NPRM, 9 FCC Rcd at 1106 (¶ 22).

users and locations that have never before had access to mobile telecommunications services, and, in many cases, have never had access to telecommunications services at all. These systems will thereby usher in a new era in the global sharing of information that holds great promise for the United States and the world at large.

i. **Odyssey Will Facilitate A Host Of New Services To Benefit Business And The Public.**

TRW generally intends to provide capacity on a non-common carrier basis to service providers for the provision of service to end users. Odyssey system capacity will be used for the provision of high quality, affordable and ubiquitous satellite capacity for mobile voice services that will reach the growing number of cellular "roamers" and other unserved or underserved segments of the rapidly expanding cellular telephone market; for paging and messaging; for monitoring of remote locations; and for the provision of new, low-cost data services.<sup>35/</sup> End users of Odyssey will include frequent business travelers who journey to areas where no cellular service is available, or where the only available cellular service is incompatible with the handset they wish to use; businesses or commercial entities that need the capability to track inventory or freight carriers and to maintain constant communications with their personnel; people living in rural areas where no mobile

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<sup>35/</sup> See Odyssey Application at 15.

services are available, or in areas where neither wireless nor wireline services exist; and municipal, local and state governments and federal agencies that need to provide emergency services.<sup>36/</sup> TRW estimates that Odyssey will have 2.5 million subscribers by the year 2000.

The high-quality voice service capability of Odyssey will dramatically improve present-day cellular telephone service, and will permit communications between aircraft and persons on the ground as well (where permitted). Odyssey will permit universal call set-up capabilities from a fixed location, through the public switched message network, to a mobile unit anywhere in the world, and vice versa. Cellular service providers will therefore be able to use Odyssey to reach areas that are not accessible with existing terrestrial cellular telephone systems, and to serve low density population areas which cannot be served economically by means of terrestrial systems. Odyssey will also allow cellular companies to serve the ever-growing numbers of "roamers."

Finally, Odyssey satellite capacity will be used to provide data services to mobile users throughout the world. Both corporate and maritime users will be able to employ Odyssey capacity for records management, data transfer applications and non-voice messaging. Odyssey will permit users to access databases from most locations on the globe, expanding the availability of stored information to virtually the

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<sup>36/</sup> See id.



entire planet. Given this enormous potential, there can be little doubt that service providers utilizing Odyssey will devise a host of other applications for the satellite system as well.

**ii. The Services Available Via Odyssey  
Will Bring Tremendous Economic Benefits.**

Odyssey will permit the provision of services that will dramatically expand markets for United States-produced goods and services throughout the world. The growth of those markets will strengthen the U.S. economy, thereby benefiting the U.S. public, and will also open a world of possibilities to foreign consumers. By enabling U.S. business travellers to communicate easily with their companies in the United States from any location and to obtain information on the availability of inventory, among other things, Odyssey will facilitate the foreign sale of U.S. goods and services. Odyssey will also enable employees of foreign companies in the field to communicate directly with the United States via the satellite system to learn of U.S. products and services, check on inventory availability or obtain information on the repair and maintenance of U.S. products, and to order spare parts, replacements or new items quickly and efficiently for their own use (or resale) abroad. More fundamentally, Odyssey will promote the exchange of information about U.S. goods and services between the people of the United States and the people of foreign

countries, particularly those in locations that have previously had little or no telecommunications service.

Odyssey will also improve the efficiency and competitiveness of U.S. industries worldwide. As noted, Odyssey will enable U.S. companies to maintain contact with their employees no matter what those employees' locations. Companies can therefore obtain information and orders more quickly, enhancing their responsiveness to changes in business conditions and consumer demand. United States corporations involved in drilling, mining or other fields that require the placement of large numbers of employees in remote locations will benefit dramatically from the information available via the voice, data and paging capabilities of Odyssey.

In addition, the construction and launch of Odyssey will provide a direct benefit to the U.S. economy and to workers here and abroad. TRW estimates that the number of jobs related to Odyssey will reach 4,340 by 1998, in the United States, and 6,200 worldwide. The bulk of those jobs are expected to involve satellite and ground segment construction and the manufacture and sale of handsets for voice mobile communications.

It is almost unnecessary to note that Odyssey and other non-geostationary MSS systems will also enhance U.S. global competitiveness in telecommunications. The rapid implementation of these new mobile satellite proposals will make the United States the first nation to offer such technology to the world at large, and the first to

benefit from the massive markets for MSS Above 1 GHz services. The knowledge gained from the operation of such systems will enable U.S. satellite companies to fine-tune their system designs and to adapt them so as to increase further the United States' technological lead in telecommunications. Once again, the U.S. public will benefit from the economic strength that competitiveness brings.

The benefits that Odyssey and other non-geostationary satellite services will offer will by no means be confined within U.S. borders, however. By providing service to locations abroad where telecommunications services are limited or nonexistent, Odyssey will give many people in foreign countries their first opportunity to benefit from the ongoing telecommunications revolution. Odyssey will enable nations that lack the resources to build a terrestrial telecommunications infrastructure to leapfrog their way into the information age. The result will be a better-informed world in which vital facts, data and services are available to those who need them, and where understanding among nations is enhanced.

**2. TRW Agrees With The Commission's Proposal To Establish Minimum Global Coverage Requirements, But Encourages The Commission To Avoid Overly Broad Standards That Are Not Economically Justified.**

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The Commission concluded in the NPRM that it would be beneficial to mandate as a minimum technical standard for license eligibility that applicants in the MSS Above 1 GHz service demonstrate in the technical portions of their applications the capability to provide a specified degree of global coverage.<sup>37/</sup> TRW agrees generally that such an eligibility standard is necessary in order to realize the full benefits of non-geostationary operation; but the Commission may wish to consider whether the proposed minimum standard is unduly stringent.

TRW emphasizes, however, that there can be no question that a threshold standard is a necessity. Without standards to ensure some level of "universal" coverage, licensees with limited capabilities might implement systems that are able to provide coverage only of certain areas of the globe (e.g., areas where the infrastructure necessary to provide personal communication service already exists and/or demand for such services is high), but that lack the capability ultimately to serve the broader international community. Although this would provide additional competition for existing service providers in these areas, it would not serve the larger goal of enhancing the ability of U.S. telecommunications service providers to meet

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<sup>37/</sup> See NPRM, 9 FCC Rcd at 1106 (¶ 23).

worldwide needs. Nor would such limited systems speed the development of a truly global communications infrastructure -- one of the inherent theoretical capabilities that makes the advent of MSS Above 1 GHz such a significant step, a step that Vice President Gore recently identified as "an essential prerequisite to sustainable development" of the international economy.<sup>38/</sup> Most importantly, such limited systems would use the same amount of spectrum capacity on a world-wide basis as a truly international system that does provide global coverage.

TRW's Odyssey easily meets the Commission's proposed global coverage standard. Odyssey is capable of providing coverage to "all areas of the world" below 80° latitude with at least one satellite visible at an elevation angle of 5° or more above the horizon for seventy-five percent or more of each day. Nonetheless, TRW believes that the Commission must be cognizant as well of the need to carefully define both the specific terms and implementation guidelines applicable to these requirements. Technical standards, particularly threshold eligibility standards, that sweep too broadly will likely produce less than optimal results by forcing applicants to design systems that incorporate service capability to some areas for which there is not now, and may never be, actual demand.<sup>39/</sup>

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<sup>38/</sup> Statement by Vice President Al Gore, World Telecommunication Development Conference, Document 70-E (March 21, 1994).

<sup>39/</sup> As the Commission itself recently stated in another important proceeding dealing with enhanced communications technology, the final standard here should "strike[ ] an  
(continued...)

Based on the need for a rational and balanced rule, TRW agrees with the Commission's evident conclusion that this eligibility standard should be based simply upon the coverage capability of each system, i.e., the visibility of at least one satellite above the horizon at an angle of elevation of 5° or greater.<sup>40/</sup> This definition recognizes that the primary benefit of the MSS Above 1 GHz is to provide near universal access to a world-wide communications network, but that the types of service to be offered should be left to the service providers' discretion as their markets grow and develop -- very likely in ways that cannot now be anticipated. Indeed, the Commission recognized this need for flexibility to allow the market to dictate what services will be offered in proposing rules for the non-voice, non-geostationary ("NVNG") MSS service and declining there to adopt any specific coverage standard.<sup>41/</sup>

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<sup>39/</sup>(...continued)

appropriate balance between [the Commission's] goal of ensuring that . . . service is available in rural and remote areas and mere geographic coverage requirements that may lead to coverage where service is not needed and economically unjustified." See Amendment of the Commission's Rules to Establish New Narrowband Personal Communications Services (MO&O), 9 FCC Rcd 1309, 1314 (1994) ("Narrowband PCS Clarification Order").

<sup>40/</sup> See NPRM, 9 FCC Rcd at 1106 (¶ 23).

<sup>41/</sup> See Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile-Satellite Service, (Notice of Proposed Rule Making), 8 FCC Rcd 6330, 6332 (1993) ("NVNG MSS NPRM") ("[I]f a market for services exists, the providers will maximize their available coverage and potential to meet the market demands accordingly."). See also Licensing of Space Stations in the Domestic-Fixed Satellite Service, 88 F.C.C.2d 318, 321 (1981) (Discussing the  
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While the ultimate promise of MSS communications services is in their capability to serve the entire globe, this should not be translated into an affirmative requirement that such systems provide identical services at all times to all parts of the globe. It is therefore appropriate that the Commission's proposal requires only that each applicant/licensee should be capable of providing technical coverage, as defined in the proposed rule, without specifying particular categories or levels of service.

To this end, compliance with the coverage requirements should be judged on the basis of overall technical capability of the system design. Applicants should not be required to offer immediately the full scope of service which their systems are able to provide, but should be permitted to modify and gradually expand their service offerings to address particular customer demands as they arise. Actual markets for services should be permitted to develop naturally, and each licensee permitted to offer whatever services are consistent with these developments.

In short, applicants should merely be required to demonstrate that their ultimate systems, when constructed, have the inherent capability to cover all areas of the world, as defined by the Commission, and should not be required to demonstrate that any type or given level of service will be provided in any particular manner. Imposing a coverage capability requirement, as opposed to a global service

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<sup>41/</sup>(...continued)

Commission's decision to permit marketplace forces to govern the development of the nascent domestic-fixed satellite industry).

requirement, is also most consistent with the service concept that most applicants envision -- including TRW -- under which the satellite system operators would make space segment capacity available on a bulk or wholesale basis to entities that would then provide their services to end users. At this point, most applicants do not know who or where those end users will be.

Finally, and with respect to the proposed coverage standard itself, TRW believes that it may be unnecessary for the Commission's purposes to require all systems to demonstrate the capability to provide coverage seventy-five percent of every day at latitudes less than 80°. TRW agrees in principle that the Commission should define broadly the area within which systems must meet the threshold coverage standard, and as discussed above, Odyssey is fully capable of covering "all areas of the world" from elevation angles of 5° or greater as defined by the Commission in the NPRM. The Commission's proposed standard, however, would require significant coverage of areas well within the Arctic and Antarctic Circles (which lie at approx. 67° North and South, respectively). Because there are no permanent populated areas in the Antarctic Circle, and only marginally populated areas in the Arctic Circle, it may be appropriate for the Commission to specify a lower latitude than 80° for purposes of establishing the boundaries of the area for which an absolute, mandated level of coverage capability must be demonstrated. In any event, it is to be expected that if service beyond the minimum that is required to be shown in the applications is



desired by customers, those systems with the technical capability to provide service to additional areas, e.g., Odyssey, are likely to provide it so long as such service is economically reasonable.

**3. The Commission Should Also Carefully Define Its Terms And Implementation Guidelines With Respect To Domestic Coverage Standards.**

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The requirement that MSS Above 1 GHz applicants demonstrate the capability to provide continuous domestic service should be underpinned by the same pragmatism as the global requirement addressed by TRW in the foregoing section. For example, although Odyssey will easily satisfy the Commission's proposed domestic standard and will be able to provide continuous coverage throughout all fifty states,<sup>42/</sup> TRW does not believe that this standard should be interpreted to require applicants' systems actually to provide voice service to all of the U.S. territory 100 percent of the time, as the Commission's proposed rule seems to suggest.<sup>43/</sup>

The proposed global standard refers to the capability to provide mobile service for eighteen hours of each day, while the proposed domestic standard embodied in Proposed Rule 25.143(b)(2)(iii) requires the capability to provide

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<sup>42/</sup> See NPRM, 9 FCC Rcd at 1107 (¶ 24).

<sup>43/</sup> Compare NPRM, 9 FCC Rcd at 1152 (Appendix A, Proposed Rule 25.143(b)(2)(ii) - (iii)).

"continuous" service over all of the United States -- and further specifies voice service instead of mobile services generically.<sup>44/</sup> Although it does not appear that the Commission intended a substantive distinction between "voice" and "mobile" service capability, TRW believes that these standards should be harmonized. Moreover, while broad threshold coverage demonstrations are appropriate as a means of ensuring that the full benefits of global MSS services are realized, TRW does not believe that it is prudent for the Commission to take the needless step of mandating which types of service should be offered, and where. Licensees themselves are uniquely positioned to establish their own business plans, and the Commission should not second guess their priorities.

Indeed, it is particularly unnecessary to impose rigid requirements upon licensees in this instance, as the primary purpose of the MSS Above 1 GHz service is to provide international voice communication service. In order to compete, each applicant is likely to find it necessary to provide near-universal voice capability within the United States. On the other hand, to the extent that particular applicants may propose systems that fall somewhat short of this laudable goal, they should not be penalized with the draconian penalty of disqualification from the proceeding. Indeed, as with each of the technical standards, the application of the 100 percent coverage requirement itself should not be governed by a rigid cut-off, but instead should be

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<sup>44/</sup> See id.

governed by "substantial compliance," i.e., that *de minimis* deviations from such a standard should not be disqualifying.<sup>45/</sup>

In a similar vein, the Commission also should clarify its proposed requirement that service be provided continuously "throughout the U.S."<sup>46/</sup> Given the wide dispersion of individual U.S. territories, and the description in the NPRM which states that systems must provide service "throughout the fifty states,"<sup>47/</sup> the Commission should make clear that its domestic coverage standard does not, for instance, require coverage of all U.S. Pacific territories, or other islands beyond the continental United States, on a continuous basis.

In short, and as detailed in the preceding section, public access to services that are both diverse and widely available is best protected not by mandated service offerings, but rather by ensuring multiple providers of service. With the capability of licensing multiple providers, there is no need to insist upon absolute service standards for fear that any segment of the public will remain unserved. There

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<sup>45/</sup> Indeed, in its recent clarification of the rules for the narrowband PCS service, the Commission concluded that in the interest of promoting "universal" access by the public to "nationwide" PCS services, it would require licensees to cover 37.5 percent of the U.S. population or 750,000 square kilometers within five years of the initial license grant, and to cover 75 percent of the U.S. population or 1,500,000 square kilometers within ten years of grant. This flexible, phased-in approach to "universal" service is appropriate in this context as well. See Narrowband PCS Clarification Order, 9 FCC Rcd at 1314.

<sup>46/</sup> NPRM, 9 FCC Rcd at 1152 (Appendix A, Proposed Rule 25.143(b)(2)(iii)).

<sup>47/</sup> See id. at 1107 (¶ 24).

is every reason to believe that economical services will be provided where market forces are permitted to prevail.

**4. The Commission Should Decline To Adopt Additional Threshold Technical Requirements.**

In its NPRM, the Commission asks whether it should consider adopting any other technical requirements -- e.g., "a rule that requires MSS Above 1 GHz systems to contain or operate simultaneously in the United States a minimum number of channels for mobile services as a means of achieving maximum efficiency."<sup>48/</sup> TRW believes that the Commission should not attempt to set specific service requirements.

Rigid service guidelines would be counterproductive in the MSS Above 1 GHz service, where significant advances in technology and service offerings are being implemented, and the market needs during the initial stages of service (let alone the service's long-term development) are difficult to gauge. Indeed, the Commission has rejected such rigidity even in services where markets and technologies were better established. To cite the most recent example of this approach, the Commission made plain in its order clarifying its narrowband PCS rules that it was not adopting specific service guidelines because the broad definition it adopted instead would "allow the

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<sup>48/</sup> Id. at 1107 (¶ 25).

market to determine the mix of services and technologies that best meets the needs of the public for narrowband PCS services."<sup>49/</sup>

In this instance, where licensees must demonstrate the ability to provide domestic and global coverage, and must also construct their full system within an appropriate time frame (see Section V(C), infra), the Commission should not attempt to micro-manage the development of this nascent service market by promulgating efficiency or other service standards. The Commission should only be concerned with the ability of potential users ultimately to access MSS service; there is no need for the Commission to mandate a particular minimum number of simultaneously available U.S. channels for mobile services "as a means of achieving maximum efficiency."<sup>50/</sup> Systems will naturally endeavor to provide as many channels as possible consistent with maximization of economic efficiency.

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<sup>49/</sup> Narrowband PCS Clarification Order, 9 FCC Rcd at 1315. See also Licensing Space Stations in the Domestic Fixed-Satellite Service, 58 R.R.2d 1267, 1276 (1985) ("1985 Domsat Order") (rejecting as unnecessary rigid transponder "fill" requirements).

<sup>50/</sup> NPRM, 9 FCC Rcd at 1107 (¶ 25).

## **B. FINANCIAL QUALIFICATIONS**

1. **The Commission's Proposal To Adopt The Domsat Financial Standard For The MSS Above 1 GHz Service Would Appear To Be Appropriate Only In The Event Mutual Exclusivity Is Not Resolved; In Any Event, Some Clarification Of The Standard Is Needed.**
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- a. **Perceived Mutual Exclusivity Is The Principal Basis For The Commission's Chosen Standard.**

While recognizing that historically, "the Commission has fashioned financial requirements for satellite services on the basis of entry opportunities in the particular service being licensed,"<sup>51/</sup> the Commission goes on to note that "where a grant to an under-financed space station applicant may preclude a fully capitalized applicant from implementing its plans, and service to the public may be consequently delayed, a stringent financial demonstration has been mandated."<sup>52/</sup> Observing that the MSS Above 1 GHz Negotiated Rulemaking Committee could not "agree to a method by which all six proposed systems could be licensed," the Commission surmised that "a license award to one applicant could consequently preclude another applicant from implementing its system" and, therefore, concluded that the "same

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<sup>51/</sup> Id. at 1107 (¶ 26).

<sup>52/</sup> Id. at 1108 (¶ 26).

financial showing that is required in the domestic fixed-satellite service" (hereinafter "Domsat standard") should be adopted.<sup>53/</sup>

Thus, the principal -- if not sole -- basis for the Commission's proposal to apply the Domsat standard to determine the financial qualifications of MSS Above 1 GHz applicants is perceived mutual exclusivity among *all* of them. If such mutual exclusivity does not exist, however, the Commission has no basis for applying so stringent a financial standard in what it acknowledges is "a new and, as yet, commercially unproven service."<sup>54/</sup> Accordingly, in the case of those MSS Above 1 GHz applicants proposing to use Code Division Multiple Access ("CDMA") transmission techniques, where mutual exclusivity will not exist, the Commission's sole rationale for implementing the strict Domsat financial standard becomes inoperative. Another standard, therefore, could be considered for applicants capable of sharing the same frequency band.

**b. If The Domsat Standard Is Retained For One Or All Cases, The Commission Must Clarify Paragraph 27 Of The NPRM.**

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Regardless of whether the Commission ultimately decides to retain the strict Domsat financial standard for one or all cases -- CDMA shared spectrum and Frequency Division Multiple Access/Time Division Multiple Access

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<sup>53/</sup> Id. at 1108 (¶ 27).

<sup>54/</sup> Id.

("FDMA/TDMA") segmented spectrum -- the Commission has inadvertently imposed a stricter financial standard than it explicitly says it intended. The confusion appears in Paragraph 27 of the NPRM, and requires clarification.

There, the Commission states that it "propose[s] to adopt the same financial showing that is required in the domestic fixed-satellite service," citing the 1985 Domsat Order.<sup>55/</sup> It goes on, purportedly to clarify what this means, and incorrectly recites that the standard requires applicants "to provide evidence of *uncommitted* current assets or irrevocably committed debt or equity financing sufficient to meet the estimated costs of constructing all planned satellites, launching them, and operating the system for the first year."<sup>56/</sup> But neither Section 25.140 of the Commission's Rules nor the 1985 Domsat Order requires that assets be *uncommitted*; in fact, the Commission itself rejected such an additional stringency in that very decision.<sup>57/</sup>

Section 25.140(c) of the Commission's rules requires that each applicant for authority to construct and/or to launch and operate a space station "demonstrate in accordance with paragraph (d) of this section the applicant's current financial ability to meet the:

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<sup>55/</sup> 1985 Domsat Order, 58 R.R.2d at 1267.

<sup>56/</sup> NPRM, 9 FCC Rcd at 1108-1109 (¶ 27) (emphasis added) (citing 47 C.F.R. § 25.140).

<sup>57/</sup> See 1985 Domsat Order, 58 R.R.2d at 1272-73.



- (1) Estimated costs of proposed construction and/or launch, and any other initial expenses for the space station(s); and
- (2) Estimated operating expenses for one year after launch of the proposed space station(s)."<sup>58/</sup>

Paragraph (d) goes on to explain with greater specificity precisely the type of evidentiary demonstration that is encompassed by the requirements of paragraph (c). Thus, for instance, paragraph (d)(1) states that a balance sheet current for the latest fiscal year "together with an exhibit demonstrating that the applicant has current assets and operating income" to meet the estimated costs of satellite construction, launch and operations will be sufficient to satisfy the requirements of paragraph (c) of this section.<sup>59/</sup> Nowhere does the additional restrictive adjective, *uncommitted*, appear. In fact, as noted, the Commission rejected this very requirement in finalizing its Domsat standard in 1985.

In the notice of proposed rule making leading to the 1985 Domsat Order, the Commission proposed rules that would have required applicants to demonstrate " 'uncommitted capital assets' sufficient to finance the system 'together with an explicit commitment from management that these assets will be used for the proposed

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<sup>58/</sup> It is unclear whether "operating expenses" is intended to encompass the capital costs of any ground segment facilities. At most, TRW believes such capital costs should only encompass those involved in telemetry, tracking and control of the satellite constellation.

<sup>59/</sup> 47 C.F.R. § 25.140(c) - (d) (1993).